

Serial No. 09/520,363
Amdt. dated July 23, 2004
Reply to Office Action of January 23, 2004

Docket No. K-0161

Amendments to the Claims:

Please cancel claims 1-42 without prejudice to their reentry at some later date and add the following new claims in place thereof. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-42 (Canceled).

43. (New) A communication device comprising:

a physical layer;

a medium access control (MAC) layer; and

a radio link control (RLC) layer, wherein the MAC layer receives multicast data from the RLC layer through a prescribed number of multicast data channels and receives multicast control data from the RLC through at least one logical control channel, the prescribed number being based on a number of multicast services within a geographical area, and an output of the MAC layer corresponding to the multicast control data and the multicast data being provided to the physical layer through at least one transport channel.

44. (New) The communication device of claim 43, wherein multicast control data comprises a plurality of frames, and there is a prescribed relationship between the frames and the multicast data channels.

45. (New) The communication device of claim 44, wherein there is a one-to-one relationship between each frame and each multicast data channel.

46. (New) The communication device of claim 44 or 45, wherein each frame provides control information for at least one corresponding multicast data channel.

47. (New) The communication device of claim 46, wherein each frame is provided to at least one transport channel prior to providing the multicast data of the at least one corresponding multicast data channel.

48. (New) The communication device of claim 47, wherein the control information provided on the at least one transport channel has a paging cycle based on the prescribed number of multicast services.

49. (New) The communication device of claim 43, wherein the MAC layer includes an entity for performing at least one of scheduling and multiplexing.

50. (New) The communication device of claim 49, wherein the entity further performs TFC selection.

51. (New) The communication device of claim 43, wherein the geographic area is a coverage area of a cell.

52. (New) The communication device of claim 43, wherein the number of multicast services is based on a number of specific groups subscribing to specific multicast services.

53. (New) The communication device of claim 52, wherein each specific group is based on a subscriber group identification or international mobile group identity.

54. (New) The communication device of claim 43 or 44, wherein the multicast data channels are multicast traffic channels.

55. (New) The communication device of claim 54, wherein the multicast traffic channels are logical channels.

56. (New) The communication device of claim 43, further comprising a radio resource control (RRC) layer which is an upper layer of the RLC layer.

57. (New) The communication device of claim 56, where in the RRC layer provides at

least one of variable transmission rate function, dynamic code usage function and dynamic scheduling functions.

58. (New) The communication device of claim 43, wherein the RLC layer provides at least one of unacknowledged multicast data transmission function and multicast delivery function.

59. (New) The communication device of claim 43, wherein the physical layer supports at least one of a message transmission containing the multicast data, discontinuous transmission functions, discontinuous reception function and multicast data transmission with multi-code.

60. (New) The communication device of claim 43, wherein the multicast data channels are used to serve point to multipoint (PTM) services.

61. (New) The communication device of claim 60, wherein the PTM services are unidirectional.

62. (New) The communication device of claim 43, wherein the communication device provides at least one of periodic multicast data transmission and non-periodic multicast transmission.

63. (New) The communication device of claim 43, where in at least one transport channel supports paging.

64. (New) The communication device of claim 63, wherein the paging has a paging cycle.

65. (New) The communication device of claim 64, wherein the at least one transport channel is only used in the downlink.

66. (New) The communication device of claim 43, wherein the at least one transport channel supports a sleep mode or an idle mode of a terminal.

67. (New) The communication device of claim 43, wherein the at least one transport channel provides a code assignment information to be used by a terminal.

68. (New) The communication device of claim 43, wherein the at least one transport channel is mapped to a physical channel.

69. (New) The communication device of claim 43, wherein the physical channel

comprises at least one of a physical multicast channel (PMCH) and physical multicast control channel (PMCCCH), and the at least one transport channel is at least one of multicast channel (MCH) and multicast control channel (MCCH).

70. (New) The communication device of claim 68, wherein the physical channel provides code usage information for at least one transport channel.

71. (New) The communication device of claim 68, wherein the at least one transport channel does not use power control.

72. (New) The communication device of claim 68, wherein the physical channel does not contain power control information.

73. (New) The communication device of claim 68, where the physical channel uses at least one pilot bit.

74. (New) The communication device of claim 68 or 73, wherein the physical channel includes a transport format combination indicator (TFCI).

75. (New) The communication device of claim 68, wherein a frame of the physical

Serial No. 09/520,363

Docket No. K-0161

Amdt. dated July 23, 2004

Reply to Office Action of January 23, 2004

channel is 10ms and includes a prescribed number of slots.

76. (New) The communication device of claim 75, wherein the prescribed number of slots is 16.

77. (New) The communication device of claim 43, wherein at least one transport channel is a common downlink channel.

78. (New) The communication device of claim 68, where the physical channel is a secondary common control physical channel (S-CCPCH).

79. (New) The communication device of claim 43, wherein a terminal determines available multicast services from a channel containing cell-specific information.

80. (New) The communication device of claim 79, wherein the channel is a broadcast channel.

81. (New) A multicast service method comprising:
providing at least one multicast data channel;
providing a multicast control channel; and

providing an indication channel for indicating a configuration of the multicast control channel, wherein

the indication channel provides information regarding a location of at least one first frame within the multicast control channel, and

the frame having control information for receiving multicast data on the multicast data channel.

82. (New) A multicast service method comprising:

receiving multicast data on at least one multicast data channel;

receiving control data corresponding to the multicast data on at least one multicast data channel through a multicast control channel; and

receiving information regarding a location of at least one first frame within the multicast control channel through an indication channel, and

the frame having control information for receiving multicast data on the at least one multicast data channel.

83. (New) The method of claim 81 or 82, wherein the information regarding a location of a frame is provided periodically.

84. (New) The method of claim 81 or 82, wherein the information comprises a

plurality second frames, wherein the number of second frames corresponds to a prescribed number of multicast services within a geographical area.

85. (New) The method of claim 84, wherein the plurality of second frames is sent periodically.

86. (New) The method of claim 85, wherein the plurality of second frame sent periodically is used to wake up a UE from a sleep mode or an idle mode.

87. (New) The method of claim 85 or 86, wherein the plurality of second frames are broadcasted within the geographical area.

88. (New) The method of claim 81 or 82, wherein the indication channel is a broadcast channel.

89. (New) The method of claim 81 or 82, wherein the multicast control channel is a transport channel.

90. (New) The method of claim 81 or 82, wherein the multicast data channel is a logical channel.

91. (New) The method of claim 81 or 82, wherein the at least one multicast data channel is a traffic channel.

92. (New) A multicast service method, comprising:
providing a prescribed number of multicast traffic channels, said multicast traffic channels being logical channels, the prescribed number of multicast traffic channels corresponding to a number of multicast services within a geographical area; and
providing a logical control channel for the prescribed number of multicast traffic channels, wherein control data is provided through said logical control channel.

93. (New) The method of claim 92, wherein said control data comprises a plurality of frames, and there is a prescribed relationship between the frames and the prescribed number of multicast traffic channels.

94. (New) The method of claim 93, wherein a corresponding frame is provided to at least one transport channel prior to providing the multicast data of a corresponding multicast traffic channel.

95. (New) The method of claim 93, wherein there is a one-to-one relationship

Serial No. 09/520,363

Docket No. K-0161

Amdt. dated July 23, 2004

Reply to Office Action of January 23, 2004

between each frame and each multicast traffic channel.

96. (New) The method of claim 93, wherein each frame provides control information for at least one corresponding multicast traffic channel.

97. (New) The method of claim 92, wherein the geographic area is a coverage area of a cell.